

REMARKS/ARGUMENTS

Claims 2-7 and 9-21 are pending herein. Claims 1 and 8 have been cancelled without prejudice or disclaimer in favor of pending claims 16 and 17 (rewritten in independent form). Claims 2-7, 9-15 and 18-20 have been amended to depend from one of independent claims 16 or 17, or have been amended for clarification purposes only.

1. Claims 1-21 were rejected under §112, second paragraph on page 2 of the Office Action. To the extent that this rejection might be applied against rewritten claims 2-7 and 9-21, it is respectfully traversed.

The two separate requirements set forth under §112, second paragraph are that (i) the claims must set forth the subject matter that applicant regards as his invention and (ii) the claims must particularly point out and distinctly claim that subject matter. See Manual of Patent Examining Procedure (MPEP) § 2171. The MPEP makes clear that "if the scope of the subject matter embraced by the claims is clear, and if applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. 112, second paragraph." See MPEP § 2173.04 (citing *In re Miller*, 441 F.2d 689, 169 USPQ 597 (CCPA 1971)).

The PTO states on page 2 of the Office Action that "while it is understood that other group III elements in addition to aluminum may be included in the III nitride film, the claims are vague as to what is the actual structure that makes up the invention." As should be clearly understood from the above citations to the MPEP, §112, second paragraph does not require that Applicants recite "the actual structure" of the claimed Group III nitride film, so long as the "scope of the subject matter embraced by the claims is clear" to one of ordinary skill in the art. As is shown below, the PTO's §112, second paragraph rejection is erroneous and should be withdrawn because one skilled in the art would clearly understand the scope of what is being claimed in pending claims 16 and 17.

The subject matter which Applicants regard as the invention is the discovery of the substrate warpage inhibiting effects beneficially obtained from an Al-including Group III nitride layer having a screw-type dislocation density up to $1 \times 10^8/\text{cm}^2$ and being formed directly on a base. As such, the "scope of the subject matter embraced by the claims" is clear since skilled artisans would easily know upon reading the claims that "a Group III nitride film" (recited in pending claim 16) and "a Group III nitride buffer film" (recited in pending claim 17) pertain to a Group III nitride film composition that can include any of the elements

listed in Group III of the Periodic Table. Similarly, skilled artisans would undoubtedly understand that the claim recitation "including at least elemental Al" (recited in pending claims 16 and 17) means that the Group III nitride film must include Al, but could also include other Group III elements. Indeed, the PTO explicitly acknowledges this on page 2 of the Office Action. Reconsideration and withdrawal of this rejection are respectfully requested, especially in light of the fact that §112, second paragraph does not require Applicants to recite "the actual structure" of the claimed Group III nitride film and the above discussion proves that the "scope of the subject matter embraced by the claims is clear" to one of ordinary skill in the art.

2. Claims 1-21 were rejected under §102(e) over Bourret-Courchesne. To the extent that this rejection might be applied against rewritten claims 2-7 and 9-21, it is respectfully traversed.

As discussed above, pending independent claims 16 and 17 each recite, among other things, that a Group III nitride film includes Al and is formed on a base. The Al-including Group III nitride film has a screw-type dislocation density value up to $1 \times 10^8/\text{cm}^2$. Pending independent claims 16 and 17, which, again, have been rewritten in independent form, each further recite that the Al-including Group III nitride film is formed directly on the base. The applied prior art of record, discussed below, does not disclose or suggest that an Al-including Group III nitride film, having a screw-type dislocation density up to $1 \times 10^8/\text{cm}^2$, is directly formed on a base, as claimed.

Bourret-Courchesne apparently discloses a multiple layered structure including an Al-including Group III nitride film that can have, in the upper layers of the multi-layered structure, a dislocation density as low as $10^8/\text{cm}^2$ (see, for example, page 1, paragraph [0007], lines 4-11 and 16-19; page 3, paragraph [0040], lines 9-13; page 2, paragraph [0016], lines 11-13). As discussed above, pending independent claims 16 and 17 each recite that an Al-including Group III nitride layer having the claimed screw-type dislocation density value is *formed directly on the base*. Applicants respectfully submit that there is no disclosure of this claimed feature anywhere in Bourret-Courchesne. Nor would the disclosure in that reference have lead one to believe that any benefits would result from forming an Al-including Group III nitride film (having the claimed dislocation density) directly on a base material (as claimed), let alone recognition in Bourret-Courchesne that forming such an Al-including Group III nitride film directly on the base would beneficially provide the substrate warpage

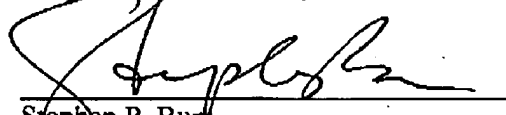
inhibiting effects associated with the claimed Group III nitride layers recited in pending claims 16 and 17. Again, Bourret-Courchesne clearly teaches that the lowest dislocation density is observed in the upper layers of the multi-layered structure, not in a layer that is formed directly on a base, as claimed (see the above citations to Bourret-Courchesne).

In view of all of the foregoing, reconsideration and withdrawal of the 102(e) rejection over Bourret-Courchesne are respectfully requested.

If the Examiner believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,



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